



California Energy Commission
Dockets Office, MS-4
Re: Docket No. 12-EPB-1
1516 Ninth Street
Sacramento, CA 95814-5512

Dear CEC Dockets Unit,

I am writing in regards to the state's Comprehensive Energy Efficiency Program for Existing Buildings (AB 758), as a follow-up to the CEC Scoping Report Staff Workshop held on Oct. 8-9. Soladigm is a California business that urges the California Energy Commission to include smart windows as part of the state's comprehensive approach to reducing energy use in buildings.

Smart windows are a category of next-generation windows that have the ability to change traditionally static performance characteristics such as visible light transmittance and solar heat gain coefficient. Examples of technologies that enable Smart Windows are electrochromic, thermochromic, photo-chromic, liquid crystal and suspended particle devices. Thermochromic and photochromic technologies change their properties based on ambient temperature and light respectively. Electrochromic, liquid crystal and suspended particle device technologies have the advantage of electronic control of glass performance, enabling truly intelligent controls that can be integrated with occupant schedules, lighting levels, or algorithms to increase building energy efficiency.

The building sector in the U.S. accounts for approximately 40% of energy consumption and more than 70% of electricity use, about half of that coming from commercial buildings and half from residential. Smart windows can provide an important solution to this growing problem of building energy consumption.

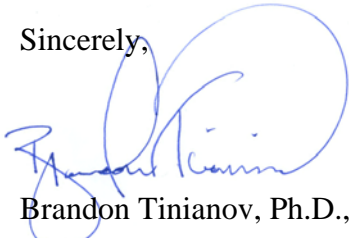
Soladigm and other companies have developed next-generation dynamic windows that are now cost-competitive for broad market penetration. As an example, Soladigm has developed advanced dynamic windows that use electrochromic technology to change transmission properties (across the ultraviolet, visible and infrared spectrum) in response to a small applied voltage of ~2 volts. This approach enables control of the amount of light and radiative heat passing through a window. As a result, the window can be tuned from a highly tinted state (<4% transmission) to a clear state (>60% transmission). In addition, the coating has low emissivity properties, adding to the thermal performance when integrated into a typical dual pane insulating glass unit.

Soladigm dynamic glass is beneficial to all types of buildings as a method of controlling solar heat gain and managing glare. Soladigm dynamic glass results in an average 23% reduction in whole-building peak-load compared to low-emissivity (low-e) glass, and this value can be greater than 30% in hot, sunny climates. The technology yields average 21% lower annual operating costs,

due to reduced HVAC energy consumption and system maintenance, including the elimination of blinds and shades. Lastly, Soladigm Dynamic Glass can be installed at a net cost that is equal to or less than installing low-e, while providing full glare control for significant occupant comfort and productivity benefits.

Thank you for your efforts to address California's energy consumption in buildings with this comprehensive statewide review of existing programs and technologies. We are confident that adding smart windows to the mix will provide huge energy savings for California.

Sincerely,

A handwritten signature in blue ink, appearing to read "Brandon Tinianov", is positioned above the printed name and title.

Brandon Tinianov, Ph.D., P.E., LEED AP

Soladigm Senior Director of Technical Business Development

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